

Comprehensive Film Plastic Diversion and Management Action Plan and Plastic Trash Bag Program

Report to the Legislature

December 17, 2004



Zero Waste—You Make It Happen!

S T A T E O F C A L I F O R N I A

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Executive Summary

The Plastic Trash Bag law requires manufacturers of *regulated (thickness of 0.7 mil or greater)* plastic trash bags to annually certify to the California Integrated Waste Management Board (Board) that either: (1) their regulated trash bags were manufactured with 10 percent or more postconsumer material; (2) used 30 percent postconsumer material in all of their plastic products not subject to compliance with the Rigid Plastic Packaging Container or other minimum-content law; or (3) demonstrate that there was an insufficient quality and/or quantity of postconsumer materials to satisfy the 10 or 30 percent standards.

California businesses and residents dispose of approximately 1.75 million tons of film plastic products including nearly 400,000 tons of trash bags in landfills each year. Through implementing California's Plastic Trash Bag Law, the Board has had some success in increasing the amount of recycled material being collected and returned to the economy in the form of products using postconsumer material. Since the law became effective in 1993 the amount of recycled plastic used in trash bags sold in California has increased fourfold, and nearly 5,000 tons of film plastic is being diverted from California's landfills each year. This has created business opportunities for a number of California recycled material collectors and postconsumer material suppliers. In summary, since the program's inception in 1993 about 80,000 tons of film plastic has been diverted from landfills through use in recycled content plastic trash bags.

In regard to the 2003 certification, while only two of the approximately 35 manufacturers of regulated trash bags who submitted certifications failed to demonstrate compliance with the law's postconsumer material requirement, nearly 50 percent of the trash bags sold in California fail to meet the 10 percent postconsumer material standard. On average, the regulated trash bags sold in 2003 contained 8 percent recycled material.

Public Resources Code section 42297 prohibits non-compliant manufacturers, wholesalers or material suppliers from contracting with any agency of the State of California. The Department of General Services utilizes the Board's published list to confirm that a wholesaler or manufacturer is eligible for award of a contract by the State. The Board has listed seven manufacturers and four wholesalers as non-compliant with the material usage or reporting mandates of the law for the 2003 reporting period on its web site.

This legislative report updates the Board's 2001 Report to the Legislature (Report) that was adopted by the Board. The 2001 Report was not submitted to the Legislature pending the completion of and recommendations stemming from the Board's *Plastics White Paper* (www.ciwmb.ca.gov/Publications/default.asp?pubid=1010). In addition, the updated Report also includes data from the 2003 certifications of manufacturers and wholesalers, as well as the consideration of recommendations from the *Plastics White Paper*.

Specifically, the Board's 2003 *Plastics White Paper* recommended a more comprehensive approach be developed to implement systems that optimize plastics source reduction, diversion and recycling. This would require comprehensive approaches that reflect product stewardship/shared responsibility principles and equitable spreading of economic and environmental costs/impacts between all affected parties. The *Plastics White Paper* also recommended that the State should promote the use of plastic products and technologies, such as biodegradable plastic products and conversion processes, that minimize adverse environmental impacts associated with discarded plastics.

The recommendations in this report propose a more comprehensive approach to divert plastic film from California's landfills. The Board recommends that the legislature suspend the

enforcement of the plastic trash bag law and direct the Board to negotiate memoranda of understanding (MOU) with members of the film plastic products industry with the intent of increasing the diversion of such products from California's landfills by 2007–2008. The failure to negotiate/develop MOUs or the failure to meet diversion targets for types of film plastics would result in the implementation of a mil fee on film plastic products. Revenues from the fee would be used to create new or expand existing recycling and reprocessing facilities or programs. The current infrastructure does not have sufficient capacity to handle increased levels of diversion and recycling of film plastic.

The Board recommends that certain film products such as biodegradable products and any products which action by a state has been preempted by the federal government be exempted from the assessment of the mil fee, if the fee is implemented. It is the Board's expectation that participants in the MOU process will develop programs/projects to divert exempted products.

The Board recommends that the Department of General Services and other State agencies continue purchasing trash bags manufactured with postconsumer material. Other film products should be subject to the State Agency Buy Recycled Content requirements.

Recommendations

The Board recommends that legislation should be adopted to implement the comprehensive film plastics diversion and management action plan.

- Direct the Board to negotiate and execute Memoranda of Understanding (MOU) with film plastic industry stakeholders including manufacturers, distributors, retailers, waste collectors, recyclers, reprocessors, and local and state government agencies. This process should be completed by December 31, 2006.
- The MOUs would establish film plastic diversion goals and targets for 2008; projects to divert from disposal film plastic products; increase recycling; education and outreach programs; quality standards and other appropriate subjects.
- Adopt legislation to implement the assessment of a mil fee on film plastic products. The fee would be assessed if MOUs cannot be negotiated with the primary stakeholders or if the diversion goals and targets are not met. The fee, if assessed, would commence on July 1, 2007 or July 1, 2009.
- Suspend enforcement of the plastic trash bag law (Public Resources Code sections 42290–42297).
- Repeal of the plastic trash bag law if a mil fee is assessed in either 2007 or 2009.
- Exempt biodegradable film plastics from the diversion goals and targets and the mil fee assessment.

Summary of Findings

A Comprehensive Approach to Film Plastic Products

- The Board's 2003-2004 waste composition study estimates that approximately 1.75 million tons of film plastics are disposed in California landfills each year. This is about 4.3 percent by weight of municipal solid waste, but about 8 to 10 percent by volume of landfill space.
- On a per capita basis, Californians annually disposes of 97 pounds of film plastics.

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- About two-thirds of the total disposed is generated by the commercial/industrial/agricultural sectors.
- Forty-seven percent of film plastics are in the “Other/Miscellaneous film products” category.
- Only a very small fraction of film plastic products are recycled.
- The *Plastics White Paper* concluded that California needs a comprehensive program to manage the life-cycle benefits and impacts of film plastic use, re-use/recycling and disposal.
- Most film plastic products contain no recycled material.

Trash Bags Shipped/Sold Into California

- The Board’s 2003-2004 waste composition study estimated that 390,000 tons of trash bags were disposed during 2003. Trash bags account for 22 percent of film plastics and 1 percent of all municipal solid waste.
- Manufacturers and Wholesalers reported selling more than 4.5 billion trash bags with a total weight of 130,000 tons in California in 2003.
- Manufacturers and Wholesalers reported selling more than 2.2 billion regulated trash bags with a total weight of 90,000 tons in California in 2003.
- More than 50 percent of all trash bags sold in California are non-regulated bags and are not subject to the minimum-content requirement.
- The 2.2 billion regulated bags contain 5,700 tons of postconsumer plastic material including nearly 4,800 tons postconsumer material that was diverted from California landfills.
- Approximately one-half of all manufacturers of regulated trash bags and suppliers of recycled plastic for trash bags are located in California.
- More than 90 percent of regulated bags are between 0.70 and 2.0 mils in thickness.

Trash Bag Manufacturers: Number, Size, Compliance

- Only four of the ten largest manufacturers met the minimum-content requirement. Three other manufacturers were granted exemptions from the postconsumer-use standard due to lack of available material,
- The ten largest manufacturers account for more than 85 percent of all regulated trash bags sold in California.
- Eighty-two wholesalers submitted certifications demonstrating compliance with the reporting requirement of the law.

Trash Bag Wholesalers: Number, Size, Compliance

- The wholesalers reported selling less than 1.6 billion regulated trash bags in 2003 with a total weight of 47,000 tons. These totals account for 75 percent of the amount that the manufacturers report.
- The ten largest wholesalers account for about 85 percent of all trash bags distributed by wholesalers.

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- Sixty-eight wholesalers distributed trash bags produced by non-compliant manufacturers. Only seven wholesalers only sold trash bags that were made by non-compliant manufacturers. Just three of the 20 largest wholesalers, exclusively sold trash bags made by manufacturers who met the 10 percent postconsumer material requirement.

Postconsumer Material/Resin Suppliers

- The supply of postconsumer material both in California and nationally has declined since 2000.
- Only thirty percent of the postconsumer material suppliers listed in the initial 2001 report provided such material for the manufacture trash bags in 2003.
- The credit manufacturers receive for use of California-based recycled material appears to have increased the recovery of film plastic in California. Three manufacturers needed this incentive to demonstrate compliance.

Enforcement Issues

- The penalty provisions of the law are ineffective and allow wholesalers to sell non-compliant trash bags to State agencies.
- There is no funding mechanism provided by the trash bag law to enforce the audit provisions of the law.
- Ensuring compliance by foreign manufacturers with the existing trash bag law is infeasible.
- Ensuring compliance by manufacturers and wholesalers with the reporting requirement has been difficult. The Waste Composition Study data suggests that more than one-half of the trash bags are not accounted for in the certification process.
- Biodegradable plastic bags and other film products may offer significant environmental benefits for California in regard to landfill diversion through food scrap, agricultural residue and yard trimming composting.
- Plastic trash bags do not lend themselves to closed-loop (i.e., bag to bag) recycling. A more appropriate management strategy is to reduce the total amount of plastic used to manufacture bags and to use fewer bags.

Analyzing the Law's Effectiveness

The intent of the plastic trash bag law was to encourage the diversion of film plastics from California landfills by establishing a market for the diverted material in the manufacture of trash bags. The Board's enforcement of the law has resulted in the use of recycled, postconsumer resin in plastic trash bags sold in California, which has increased four-fold since 1993. There is no evidence that manufacturers would have used recycled plastic in their trash bags without the minimum-content requirement in law. The law, therefore, created a demand for recycled plastic that has grown from about 2,000 tons per year to over 8,000 tons per year. This is plastic that would otherwise have been disposed in landfills.

Many film plastic products do not impose the technical challenge to manufacturers that trash bags do. For example, there are fewer seams per square foot and closure devices such as drawstrings to make. Agricultural and construction film tend to be much thicker (greater than 2 mils) than trash bags which allows for the use of more postconsumer material. Producing quality postconsumer

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material (PCM) appropriate for use in film applications, however, will require investment in collection and processing infrastructure.

Film plastic products constitute about 4.3 percent by weight of the municipal solid waste disposed of in California. A coordinated effort by members of the film plastic industry to divert film plastic would provide a significant incentive for the recovery and recycling of more postconsumer material. The increased diversion should help develop a sustainable recycling industry for all types of film plastics.

Many of the material suppliers/recyclers are not stable or sustainable businesses. Only 6 of the suppliers listed in the 2001 draft Report are listed in Appendix B of this Report. The businesses tend to lack adequate financial resources to purchase the cleaning, processing and testing equipment that is necessary to produce material that can be used in trash bags or other film products. By providing grants and low-interest loans the Board could foster the development of a sustainable plastic recycling infrastructure.

The grant or loan programs could be funded through a modest fee on film products. The amount of funding available will depend upon the plastic film products included under the revised law, and how the fee is levied. Board staff estimates that revenues would be several million of dollars per year.

Purpose and Scope

The CIWMB was required by PRC section 42293(b) to survey plastic trash bag manufacturers and report to the Legislature in October 2001. This report updates the 2001 report by specifically addressing the questions posed to the Board for the 2001 report and updating with the latest information from the manufacturer and wholesaler certifications for the 2003 reporting period. This report also recommends implementation of a more comprehensive solution to film plastic recycling as recommended in the Plastics White Paper.

Introduction

The California Integrated Waste Management Act of 1989 (AB 939, Sher, Chapter 1095, Statutes of 1989, as amended) requires local jurisdictions and the CIWMB to cooperatively reduce the amount of solid waste disposed in landfills by promoting the reduction, reuse, and recycling of solid waste.

The plastic trash bag program was enacted in 1993 by Senate Bill (SB) 951 (Hart, Chapter 1076, Statutes of 1993), and is codified in Public Resources Code section 42290 *et seq.* The regulations implementing this program are found in Title 14 of California Code of Regulations (CCR) sections 17975 *et seq.* This law required all trash bags 0.75 mil or greater in thickness to use 30 percent recycled plastic, postconsumer material.

Senate Bill 698 (Rainey, Chapter 44, Statutes of 1998) was signed into law on May 22, 1998, and amended certain provisions of SB 951. The 30 percent recycled-content requirement for trash bags was eliminated and replaced with three compliance options for manufacturers of trash bags 0.70 mil and greater in thickness. These three options are:

1. Ensuring that plastic trash bags contain a quantity of recycled postconsumer material equal to at least 10 percent of the weight of the regulated bags; or
2. Ensuring that at least 30 percent of the weight of material used in all of a manufacturer's plastic products intended for sale in California is recycled postconsumer material; or
3. Demonstrate that the manufacturer could not obtain postconsumer material meeting certain quantity and quality standards.

The plastic trash bag law also requires plastic trash bag manufacturers to submit, no later than March 1 of each year, a certification to the Board of their compliance with the postconsumer content requirement, for those trash bags that are intended for sale in California. Wholesalers are required to submit annual certifications identifying the manufacturer(s) they purchased trash bags from and the amount distributed in California.

Public Resources Code (PRC) section 42290 *et seq.* and accompanying regulations require all manufacturers and wholesalers of plastic trash bags sold in California to annually submit a certification to the California Integrated Waste Management Board (Board).

2001 Report to the Legislature: Discussion of Changes

The 2001 Report to the Legislature concluded that the trash bag program had been successful in increasing the amount of postconsumer film plastic being recycled into trash bags sold in California. The report recommended that the Board work with the Department of General Services to develop a list of approved trash bag brands for purchase by State agencies and that the certification program could be eliminated. These recommendations were based on technological improvements in trash bag and other film plastic production that would allow for increased use of postconsumer material without sacrificing product performance and quality. Actions of these recommendations were deferred until the Board could complete the *Plastics White Paper*. The Board's *Plastics White Paper* was expected to develop a consensus among the industry, environmental and governmental stakeholders on type of film plastic products that would be appropriate for a postconsumer resin content requirement.

The *Plastics White Paper* recommended that the State of California develop management systems to optimize plastics use, diversion, recycling and disposal. This would require comprehensive approaches that reflect product stewardship/shared responsibility principles and equitable spreading of economic and environmental costs/impacts between all affected parties. The Board recommends that more comprehensive programs increased manufacturer responsibility in implementing voluntary recycling programs and meeting specified targets for diverting plastic materials from landfills.

Reasonable diversion and recycling targets need to be established that promote technological innovations in recycling. The State should promote the use of plastics, such as biodegradable plastic products, that minimize environmental impacts.

The *Plastics White Paper* specifically concluded that the trash bag law as written is not reflective of plastics use, manufacturing technology and material supply in 2004 despite the four-fold increase in the amount of postconsumer film plastics being recovered.

Public Resources Code section 42293 (b) directed the Board to survey trash bag manufacturers to answer the following questions as part of the Board's Report:

- The names and locations of suppliers certified by manufacturers.
- The quantities of recycled plastic postconsumer material provided by California suppliers and the suppliers outside of the state.
- Provide recommendations regarding recycled plastic postconsumer material content requirements based on the availability of that material.
- Identify gauge thickness of all regulated bags.
- Determine the extent of manufacturers producing separate trash bags lines for California.

The 2001 Report provided answers to those questions, and this report updates that information with data from the 2003 reporting period.

A workshop was held in January 2002 to receive stakeholder input on technical constraints with using recycled material in trash bags and quantity and quality of postconsumer materials being supplied to the manufacturers. The manufacturers stated that raising the certification requirement above 10 percent would require the manufacturers to make thicker bags. The industry trend is

toward thinner and thinner bags. Several manufacturers at the workshop stated that they were already making different bags for the eastern states than those being marketed in California. The thicker bags would result in an increase in the amount of plastic being used in trash bags. Increasing the amount of plastic used would be counter to the intent of the law. The manufacturers also expressed concerns about the supply of recycled material. They felt that while material was available, the quality made it difficult to incorporate into trash bags. Plastic lumber and other products can use this contaminated material much more easily than trash bags.

In October 2003, Board staff conducted another workshop on trash bag manufacturing and recycled material supply constraints. Several of the major manufacturers had requested a compliance exemption due to their inability to acquire sufficient postconsumer material. The manufacturers asserted that there was both a lack of recycled material and that the available material was of such poor quality that it was impossible to manufacture bags that consumers would actually purchase. A significant volume of the material being was being diverted from disposal and recycled and was going to both composite lumber and similar products, or it was being exported to Asian markets. Following the workshop, one national manufacturer modified its recycled material purchasing specifications and practices; a couple of other manufacturers entered into long-term arrangements with suppliers.

The *Plastics White Paper* and the Trash Bag reports have included significant public and stakeholder input in the development of the reports and their recommendations.

Update of 2001 Report

The 2001 Report to the Legislature specifically addressed the areas listed below. This information has now been updated based on the results from the last three years' trash bag certifications.

Location of Postconsumer Material Suppliers

The trash bag manufacturers identified 23 companies that supplied them with recycled material during 2003. About half of the suppliers are located in California. All but two of the 12 are located in Southern California. The other two are located in the Bay Area. Ten of the suppliers are located in other states. Four of the out-of-state suppliers are located in the south; four conduct business from the Midwest; two are located in the West.

Supply of Postconsumer Material

Almost 4,800 tons of postconsumer material used in California plastic trash bags comes from suppliers located in California. The largest single supplier is located in the south and provided nearly 30 percent of the total supply. A larger portion of the material is coming from the south and mid-continent areas. The 2001 report indicated a significant amount from the east coast states and Canada.

Thickness of Regulated Bags

A "regulated bag" is a plastic trash bag of 0.70 mil or greater in thickness. The Board's 2000 survey found that more than 90 percent of all regulated trash bags are between 0.70 and 2.0 mils in thickness. Manufacturers while confirming that 90 percent of the regulated bags are between 0.70 and 2.0 mils, a growing percentage of bags are under 1.0 mil in thickness. Further, the number of trash bags less than 0.70 mils appears to be increasing.

Production of California-specific Trash Bags

Most of the manufacturers who were surveyed have reported that they do not have separate production lines or products for California. The 2001 report found that less than ten percent of the bags were produced only for the California market.

Availability of Postconsumer Material

In aggregate there appears to be a sufficient amount of recycled postconsumer material to allow virtually all manufacturers to meet the 10 percent requirement for all regulated trash bags. The material suppliers provided 2,800 tons more than the manufacturers incorporated into regulated trash bags in 2003. The four companies requesting exemptions and the two non-compliant companies, who filed forms, needed about 3,000 tons to meet the standard.

The 23 manufacturers who demonstrated compliance with the postconsumer material requirement used 1,300 tons more than was necessary to meet the standard. Most of these are relatively small manufacturers.

The large manufacturers who have requested exemptions during the 2001–2003 period have stated that they are not able to find postconsumer material of sufficient quality to meet the standard. The available material is often too contaminated to allow for use above 5 percent postconsumer material.

Manufacturers also claim that their customers—both consumers and retailers’ “private label” brands—demand bags meeting certain strength and tear resistance standards, or be clear or white, have drawstrings, and be of a certain thickness that makes the incorporation of postconsumer material difficult. Other often-cited reasons include the inability of suppliers to certify that the material is postconsumer, rather than post-commercial/industrial, or that recycled material is more expensive than virgin resin.

Biodegradable Film Plastic Products: New and Expanded Landfill Diversion Opportunities?

Biodegradable plastic bags and film products offer environmental benefits of reduced pollution, landfill space conservation, and complete decomposition of the plastic into inert molecules. The American Society of Testing and Materials (ASTM) implemented a standard test protocol, D 6400, for determining whether the plastic material is, in fact, biodegradable.

The Board believes that biodegradable plastic film products meet the objectives of a comprehensive plastics management program. Biodegradable products by definition meet the concept of landfill diversion and should not be required to pay a mil fee if one is implemented as part of the comprehensive management proposal discussed in a later section. For biodegradable products such as yard waste/trash bags, the best management strategy is through composting. Use of these products in association with food scrap and green material diversion programs could significantly increase the diversion of film plastic and organic materials.

2003 Trash Bag Certification Summary

Manufacturers

Forty-one (41) trash bag manufacturers submitted certification forms for the 2003 reporting period. Twenty-three (23) manufacturers demonstrated compliance with the 10 percent postconsumer resin requirement. These manufacturers certified as using between 10 and 47 percent postconsumer material in their regulated trash bags. Four manufacturers were granted exemptions from postconsumer recycled material content requirement due to a lack of sufficient postconsumer material available to these manufacturers.

Two manufacturers failed to meet the 10 percent postconsumer material requirement and were determined to be non-compliant. Three manufacturers whose trash bags were sold in California during 2003 failed to submit certification forms and were determined to be non-compliant with the reporting requirements of the law. Six manufacturers submitted certification forms indicating that they neither manufactured nor sold “regulated” trash bags in California during the 2003 reporting period.

The manufacturers reported selling nearly 4.5 billion trash bags with a weight of 130,000 tons in California of which 50 percent were regulated trash bags.

Table 1, below, summarizes the use of postconsumer material by compliance category for these 29 manufacturers. The table shows the amount of postconsumer material used and the amount that would be needed for all manufacturers to meet the 10 percent standard. The “Deficit/Surplus” column is the difference between used and amount needed. As might be expected the “Compliant” group had a surplus of material and the other groups were in a deficit situation. The 1,625-ton deficit represents the amount of film plastics necessary for the industry, as a whole, to achieve compliance.

Table 1. Summary of Regulated Bags Weights and Postconsumer Material by Compliance Category—2003 Reporting Period (tons)

| Manufacturers | Reg Bags | PCM used | PCM needed | Deficit/Surplus |
|----------------|----------|----------|------------|-----------------|
| Compliant (23) | 45,521 | 5,869 | 4,552 | 1,317 |
| Non-Comply (2) | 7,329 | 438 | 733 | (295) |
| Exemptions (4) | 38,688 | 1,222 | 3,869 | (2,647) |
| Totals (29) | 91,538 | 7,529 | 9,154 | (1,625) |

Of the ten largest manufacturers of regulated trash bags (on a weight basis), four requested exemptions and one did not demonstrate compliance. For the remaining 19 manufacturers, 18 were determined to have complied with the law during 2003. The top 10 manufacturers, shown in Table 2, used about seven times the amount of plastic material used by the other 19 manufacturers combined.

Table 2. Summary of Regulated Bags Weight and Postconsumer Material by Manufacturer Size—2003 Reporting Period (tons)

| Manufacturers | Reg Bags | PCM used | PCM needed | Deficit/Surplus |
|---------------|----------|----------|------------|-----------------|
| Largest Ten | 79,782 | 5,581 | 7,978 | (2,397) |
| Other Manuf. | 11,755 | 1,948 | 1,176 | 773 |
| Totals | 91,538 | 7,529 | 9,154 | (1,625) |

Wholesalers

Eighty-two (82) wholesalers submitted certifications with the Board demonstrating compliance for the 2003 reporting period. Another 43 wholesalers submitted forms claiming that they did not sell regulated trash bags. Six wholesalers were determined to be non-compliant for failing to submit certification forms and were placed on the Board's non-compliant list. The responding wholesalers accounted for 1.6 billion regulated trash bags weighing more than 47,000 tons. These numbers are about 60 percent of the totals that the manufacturers certify were sold in California.

A wholesaler is defined as any person who purchases trash bags from a manufacturer for subsequent re-sale in California. This definition includes a number of large retailers. Wholesalers must certify the manufacturers and other wholesalers from which trash bags were acquired and the amount of trash bags sold in the state.

Seven (7) wholesalers purchased all of their trash bags from non-compliant manufacturers. Only 14 wholesalers did not acquire trash bags from non-compliant manufacturers. Of the 20 largest wholesalers, which account for about 90 percent of the trash bags, only three wholesalers acquired bags from the manufacturers meeting the 10 percent minimum-content standard.

None of the wholesalers who submitted certifications identified eight of the manufacturers who claimed to have sold regulated trash bags during 2003. Three of these manufacturers are located in California. The most likely explanation is that the wholesalers who handle these companies products were never asked to submit certification forms to the Board.

Supply of Postconsumer Material/Resin

Twenty-three companies were listed by manufacturers as suppliers of postconsumer material for the 2003 reporting period. Twelve of the suppliers are located in California, and all but two of those are located in southern California.

These suppliers provided more than 11,000 tons of postconsumer material to manufacturers. Two midwestern suppliers furnished 4,600 tons to six of the reporting manufacturers. About 5,000 tons were provided by the 12 California-based suppliers, and ranged in amount from 42 to 983 tons. Most of the suppliers provided material to only one or two manufacturers.

The 2001 Trash Bag Report characterized the recycled material market as stable and growing. Data for the post-2000 reporting periods does not support this view. More than half of the suppliers listed in the 2001 report did not supply material for the 2003 year. Also, the volume of material being recovered for trash bag manufacturing is actually declining. Specifically, the amount of recycled material being supplied has declined from about 14,000 tons in 1998 to 11,000 tons in 2003. The amount of California postconsumer material has similarly decreased.

Several of the large manufacturers assert that efforts to increase the recovery of plastics is needed. They have reported that the actual amount of processed postconsumer material available as a manufacturing feedstock is also decreasing. The primary reason cited for this is the growing demand by plastic lumber industry, and the export markets to China and other Asian countries.

California Material Credit

Manufacturers who use California-generated recycled material qualify for a 20 percent credit (1.2 pounds for each pound used) towards the 10 percent postconsumer material mandate. The Board believes that the credit has been partially responsible for the recovery and re-use of California-based postconsumer material in trash bags. For the 2003 period, nearly 60 percent of the recycled

material in the trash bags was from California sources. Further, three manufacturers would not have met compliance without the California credit.

This credit had been scheduled to expire on January 1, 2001. The sunset date was deleted by Senate Bill 1127 (Karnette) in 2001, because stakeholders felt that the credit was assisting in the diversion and recycling of film plastic in California.

Imported Bags and Foreign Manufacturers: Compliance Challenges

A significant number of trash bags sold in California are manufactured outside of the United States. Estimates have placed the number of imported bags as high as 25 percent of the total amount sold. For the 2003 reporting period only one foreign manufacturer submitted a trash bag certification form. That manufacturer reported making only non-regulated bags.

The wholesalers reported purchasing imported trash bags from about five foreign manufacturers. A number of domestic manufacturers and wholesalers assert that the manufacturers and suppliers of imported bags make claims of significant postconsumer content which cannot be substantiated. In fact, stakeholders believe these imported bags are unlikely to contain much, if any, recycled material.

Penalties for Noncompliance with the Law: How Effective?

Public Resources Code section 42997 prohibits State of California agencies from entering into, or amending existing, contracts for the acquisition of any goods or services with any party found by the Board to be noncompliant with the provisions of the plastic trash bag law. Manufacturers are required to submit annual certifications to the Board demonstrating that their trash bags met one of the postconsumer material use requirements or that there was insufficient material to meet the mandates. Wholesalers are only required annual certification identifying their suppliers and the amount distributed within California. This creates the relatively common situation of compliant wholesaler selling trash bags that do not contain 10 percent recycled material or other products of noncompliant manufacturers. Because it is more likely that wholesalers will contract with state agencies for the delivery of trash bags and other supplies, the statutory penalties are not creating the desired incentive for manufacturers to make trash bags with postconsumer material.

A number of manufacturers have stated that they will not even submit certification forms—let alone meet the minimum-content mandate—because they do not contract with the State of California. One manufacturer, who did not submit a certification form, claims that it is not be subject to the law, because the company makes “custom bags” and cannot control how the customers use the bags.

2003 Certifications Results and Findings

These findings are based on information from the 2003 certification.

Trash Bags Shipped/Sold Into California

- More than 4.5 billion trash bags are sold in California each year.

- The 2.2 billion regulated trash bags contain 8,400 tons of postconsumer plastic material including nearly 5,000 tons that is diverted from California landfills.
- Approximately one-half of all manufacturers of regulated trash bags and suppliers of recycled plastic for trash bags are located in California.
- Nearly 4,800 tons of recycled plastic used in California trash bags came from California suppliers.
- More than 90 percent of regulated bags are between 0.70 and 2.0 mils in thickness.
- More than 50 percent of all trash bags sold in California are non-regulated bags and are not subject to the minimum-content requirement.

Trash Bag Manufacturers: Number, Size, Compliance

- Only four of the ten largest manufacturers met the minimum-content requirement. Three other manufacturers were granted exemptions from the postconsumer use standard due to lack of available material.
- The ten largest manufacturers account for more than 85 percent of all regulated trash bags sold in California.

Trash Bag Wholesalers: Number, Size, Compliance

- The wholesalers reported selling less than 1.6 billion regulated trash bags in 2003 with a total weight of 47,000 tons. These totals are about 75 percent of the amount that the manufacturers report.
- The ten largest wholesalers account for about 85 percent of all trash bags distributed by wholesalers.
- Sixty-eight wholesalers distributed trash bags produced by noncompliant manufacturers. Seven wholesalers only sold trash bags that were made by noncompliant manufacturers. Just three of the 20 largest wholesalers only sold trash bags made by manufacturers who met the 10 percent postconsumer material requirement.

Postconsumer Resin Suppliers

- The supply of postconsumer material in both California and the nation has declined since 2000.
- Only 30 percent of the postconsumer material suppliers listed in the 2001 report provided such material to manufacturer trash bags in 2003.
- The credit manufacturers receive for use of California-based recycled material appears to have increased the recovery of film plastic in California. Three manufacturers needed the credit to demonstrate compliance.

Zero Waste and Sustainability

The Integrated Waste Management Act (AB 939, 1989) established a social goal to reduce the amount of waste being generated in California and specifically mandated a 25 percent reduction by 1995 and 50 percent by 2000. It is a long-term vision of the Board to minimize the amount of material that needs to be disposed. This “zero waste” vision is a guiding principle of all waste

management policies. To attain the sustainable collection vision for film plastic products, recycling and re-processing industries must be developed.

Product Stewardship/Shared Responsibility and Co-operative Efforts

The Plastics White Paper recommends that the principle of product stewardship and shared responsibilities must be applied to plastic products. Product stewardship requires a manufacturer/generator to take responsibility for the impacts and social costs of its product(s) throughout a product's life. These programs can be done individually, or in concert with other stakeholders.

Stewardship mandates, such as the proposal for a mil fee, impose upon manufacturers the obligation to divert products and material they create from landfills. If each member of an industry group faithfully carries out its obligation, the concept of shared responsibility works. Also, the Plastic White Paper's recommendation (number 11) that a marketing/purchasing co-operative be created would bring shared responsibility to the film plastics industry in California.

And finally, by working with processors to implement quality assurance guidelines currently under development, the Board can help processors to enter into a continuous improvement process that may assist them in seeking certification from the International Organization for Standardization (ISO).

Board staff will also seek to partner with key stakeholders to foster the development of new and expanded plastic film collection programs for agricultural and commercial film. There is general agreement that there are markets for this material if it can be efficiently collected, cleaned and processed.

A Comprehensive Approach to Film Plastic Diversion, Recycling, and Management

Overview

The Board's 2003–2004 Waste Characterization Study indicates that approximately 1.75 million tons of plastic film products are disposed of in California's landfills each year. Plastics have increased in the waste stream from 8.9 percent in 1999 to 9.5 percent in 2004. In addition to the above, the overall recycling rate for plastic remains very low, about 3–5 percent. To help California's cities and counties to meet their 50 percent landfill diversion mandate, plastic discards must be addressed. Furthermore, if the Board is to make progress toward its zero waste goal, then the challenges associated with plastic recovery and recycling must be overcome. The Legislature and the Board have determined that plastic film is a significant part of that problem, and therefore presents both a challenge and opportunity for the increased recycling of plastic to meet the above goals.

Therefore, the Board recommends that the Legislature expand California's management of plastic film waste by enacting a multi-year four-phase plan to increase diversion of film plastic products from California's landfills. The plan's cornerstone is the negotiation of memoranda of understanding (MOU) between the Board and stakeholders (includes manufacturers, distributors, retailers, local governments, recyclers, and plastic processors) of the plastic film industry to implement a comprehensive diversion and management program and suspend the Board's enforcement of the plastic trash bag law (Public Resources Code section 42290 et seq).

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The Board proposes to execute agreements with key stakeholders by December 31, 2006. The MOUs would commit the parties to increasing the diversion of various film plastic products by the end of 2008. Specific diversion goals and targets would be negotiated/determined as part of the MOU process. If the diversion targets are not met for a specific film plastic category, all wholesalers, distributors, importers and manufacturers who direct sell to end-users of that category would pay a per-pound mil fee. Revenues collected from the fee would be used by the Board to support film plastic collection and processing activities and facilities. This legislative proposal recommends that the current trash bag would be repealed at the time when the diversion targets were either met or the mil fee is implemented for failure to meet those targets.

The proposal has two sets of decision points based on the ability to negotiate the MOUs and the success of the stakeholders at meeting the diversion targets. The Board will notify the legislature as part of the decision points. The first notice would inform the Legislature on the status of the negotiations and whether to implement the mil fee and repeal the trash bag law. The second notice would report on the status of the MOUs and whether the diversion targets were met. Also, the second notice would inform the Legislature if the mil fee will be assessed and the trash bag law repealed. The notices would be submitted to the legislature no later than March 1, 2007 and March 1, 2009.

The Board envisions a separate MOU would need to be negotiated for each of the five film plastics categories listed in Table 3, below. For example, the grocery and shopping bag MOU would cover manufacturers, distributors and retailers that use such bags to package products. A separate MOU would cover items such as stretch wrap in the ‘non-bag commercial/industrial’ category. An individual company and/or trade association could be a signatory to several MOUs.

The industry memorandum of understanding process has been used to implement product stewardship principles for carpeting and paints. These voluntary public/private partnerships are designed to reduce waste material being disposed of and increase reuse of the materials. The agreements establish waste reduction and management goals and establish projects for recycling/reuse, research needs, and public education and outreach programs.

The Board views this proposal as a step forward because it eliminates minimum content requirements as the cornerstone of a film plastic management program. The Trash Bag law used the minimum content mandate as the mechanism for increasing recycling of film plastic. Experience with that law indicates that requiring postconsumer material in trash bags may not be the best application for diverting film plastic waste and creating markets for postconsumer and other secondary materials. Many manufacturers assert that they had to use more virgin plastic than they would have otherwise to allow the use of postconsumer material in the bag. The increased use of plastic was the result of needing to make the bag sufficiently thick to prevent the contamination entrained with postconsumer material from creating structural problems such as rips and tears. Also, because trash bags are intended to be disposed, a significant amount of post-consumer material was being “landfilled.” In addition, several critics have argued that the minimum-content mandate was simply increasing recycling in other parts of the country so more plastic could be disposed in California’s landfills.

The plastic film industry stakeholders have indicated that they strongly support expanding voluntary industry efforts to increase recycling and diversion of plastic products from landfills. Many stakeholders have stated that manufacturers need to take responsibilities for the management of their products. They have indicated there are a number of technical problems in using postconsumer material in some film plastic products. These problems are contaminants that become entrained on the film; different chemical composition of the plastic materials; colors; difficulties in making bags, seams, etc. The adoption of a Board-led collaborative process will

allow stakeholders to focus on those film plastic products that are best suited for incorporation of postconsumer material/resin in their manufacture.

The Board's proposal for the implementation of the mil fee is to provide needed funding to develop the collection, cleaning and re-processing facilities to increase the amount of postconsumer film plastic available to manufacturers if the voluntary industry efforts do not meet the negotiated/established diversion targets.

Film Plastics in California's Waste Stream

Results of the Board's 2003–2004 Waste Composition Study indicate that the nearly 1.75 million tons of film plastics constitute 4.3 percent of all municipal waste disposed in California. This is an increase of 380,000 tons since the 1999 study when film plastics were 3.9 percent of the total.

The largest sub-group of film plastics is the other/misc film group, which includes candy wrappers, sandwich and newspaper bags. Plastic trash bags and stretch wrap for commercial applications are two of the other large groups.

Table 3: Amount And Composition Of Film Plastic Disposed In California, 2003–2004

| <u>Category</u> | <u>Tons</u> | <u>Pct of Waste</u> | <u>lb/person</u> |
|------------------------------|-------------|---------------------|------------------|
| Trash Bags | 390,460 | 0.97 | 21.6 |
| Grocery & Other Bags | 147,038 | 0.37 | 8.1 |
| Non-Bag Comm/Industrial Film | 290,331 | 0.72 | 16.1 |
| Film Products | 93,073 | 0.23 | 5.2 |
| Other/Misc Film | 826,757 | 2.04 | 45.7 |
| Total Film | 1,747,659 | 4.34 | 96.7 |
| All Plastic Waste | 3,809,699 | 9.47 | 210.8 |

These five primary categories of film plastic will serve as the baseline for the establishment and measurement of diversion goals and targets of the MOUs. The Board expects that these groups may be further stratified to better measure the MOU participants success in meeting the diversion goals. Board staff proposes to use the 2003—2004 waste composition study results as the baseline for establishing and measuring progress toward meeting diversion goals and targets.

Legislative Recommendations

Film Plastic Diversion and Management Action Plan

Phase 1: Suspend the Plastic Trash Bag Law:

The first phase of the legislative proposal would be to suspend the plastic trash bag certification and reporting process after the 2004 certification cycle is completed in mid-2005. The Board intends to mail certification forms to trash bag manufacturers and wholesalers in early 2005.

Phase 2: Negotiate Memorandum of Understanding

The second phase, which would formally begin in late 2005, is the negotiation of memoranda of understanding with film plastic manufacturers, distributors, suppliers, recyclers, waste collectors, local and State government agencies, etc. The MOUs would be based on the concept of producer responsibility and would set waste diversion targets and project goals for film plastic categories using the results of the 2003-2004 Waste Composition Study as the

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baseline. A similar process has been used for the carpet and paint industries, which use memorandums of understanding that are national in scope for the establishment of environmental management programs. Board staff plans to begin preliminary discussions with the stakeholders in early 2005 regarding the MOUs.

The MOUs would define the work tasks such as setting targets for diversion of film plastic products, the scope of projects, quality assurance/quality control guidelines, research needs, technical impediments to the use of postconsumer material, education and outreach programs, litter reduction and releases of plastic into the environment, best management practices, as well as timelines, and governance and funding. The Board anticipates that the MOUs would be have a term of about 24 to 30 months or through the end of 2008.

Phase 3: Implementation of the Mil Fee (if necessary)

The third phase, if necessary, would be the implementation of a mil fee to support increased collection, diversion, recovery, recycling, cleaning and reprocessing of film plastic products. The fee could be used to finance construction of new or expended facilities. The size of the fee will dependent on the specific goals that are established. The Board currently estimates that the fee would be 0.4–1 cent per pound.

The third phase would either start on July 1, 2007 if the MOUs are not negotiated by December 31, 2006, or on July 1, 2009 if the diversion targets established through the MOUs are not met. The Board will notify the Legislature by March 1, 2007, if it has not been successful in negotiating the MOUs and will implement the mil fee to commence on July 1, 2007. Alternatively, if the MOUs were negotiated but the diversion targets are not met, the notice will be submitted by March 1, 2009 for a July 1, 2009 implementation of the mil fee.

- **Phase 4: Extend the MOUs and Repeal the Plastic Trash Bag Law.**

If the MOUs are established and successful at meeting the specified diversion targets, the fourth phase would commerce with continuation of the MOUs and establishing new diversion targets. The fourth phase would include the repeal of the current plastic trash bag law.

Film Plastic Diversion and Management Action Plan: Timeline

| <u>Phases</u> | <u>Product Outcome</u> | <u>Completion Date</u> | <u>Board Action</u> | <u>Alternate</u> |
|---------------|--|------------------------|---------------------|-----------------------------------|
| 1 | Legislation to: Negotiate MOUs for diversion and Suspend Trash Law | October 1, 2005 | Negotiate MOUs | Full Enforcement of Trash Bag Law |
| 2 | Completed MOUs With stakeholders | December 31, 2006 | Notice to Leg | Phase 3 (b) |
| 3(a) | Implement Mil Fee & Repeal Trash Bag Law | July 1, 2007 | Notice to Leg | N.A |
| 3 (b) | Meet 2007-2008 Diversion Goals and targets | December 31, 2008 | Notice to Leg | Mil Fee |
| 4 | Continue/expand MOUs increased diversion | December 31, 2008 | Notice to Leg | No Mil Fee |

Biodegradable Film Plastic Products

The Board recommends that the legislation exempt plastic film products that are biodegradable, as defined by ASTM Standard D 6400 (Standard Specification for Compostable Plastics), from the mil fee and any diversion mandate, if such requirements are imposed. Manufacturers and wholesalers of biodegradable bags would be required to submit information regarding amounts of biodegradable products manufactured/sold into California, and provide test results and applicable test dates.

Report Preparation Process and Stakeholder Input

This report process began in August 2004 with the release of a draft report that recommending expansion of the Trash bag law's minimum content requirement to all film plastic products that are thicker than 0.7 mil. Manufacturers would have additional options besides postconsumer material usage for demonstrating compliance. Noncompliant companies would have been subject to a mil fee whose revenues would be used to expand and support increased diversion and recycling.

A second version of the report was issued in late September and workshops were held on October 12th and 27th. The workshops produced many written and verbal comments regarding possible minimum content and certification options, technical and economic feasibility of film plastic diversion and management, and expression by many parties that the industry needs to embrace product stewardship and responsibility for film plastic products. Based on an assessment of priorities of the stakeholders at the second workshop, the Board is recommending a voluntary public/private partnership to increase diversion. The failure to meet the diversion goals and create the partnership would cause the assessment of a mil fee on most film plastic products.

The Board staff will continue to discuss the proposed comprehensive solution to film plastics diversion. A 15-day public review period ends on January 7, 2005.

Trash Bag Program and Legislative Report Timeline

| <u>Event</u> | <u>Action</u> | <u>Date</u> |
|--|--------------------------------|-----------------------|
| 2001 Report to the Legislature | Board Hearing | September 2001 |
| 2001 Certification Lists | Board Adoption of Lists | 2002 |
| Trash Bag Workshop | Staff Workshop | January 2002 |
| Plastics White Paper | Board Adoption | June 2003 |
| 2002 Certification Lists | Board Adoption of Lists | August 2003 |
| 2002 Exemptions | Board Approval | September 2003 |
| Trash Bag Workshop | Staff Workshop | October 2003 |
| 2003 Certification Lists | Board Adoption of Lists | June 2004 |
| 2003 Exemptions | Board Approval | June & Sept 2004 |
| Trash Bag Report Workshops | Staff Workshop | October 2004 |
| Trash Bag Report to the Legislature | Board Adoption | February 2005 |

Appendix A:

Trash Bag Production and Postconsumer Material Use

SUMMARY OF TRASH BAG AND REGULATED BAGS PRODUCTION AND POSTCONSUMER MATERIAL: 1993-2003 (Weight in tons)

| Year | All Trash Bags | Regulated Bags | Total PCM | Percent | Calif. PCM |
|---------------|-------------------|-------------------|--------------|---------|---------------|
| 1993 | 57,465 | 15,196 | 1,905 | 12.5 | N.A. |
| 1994 | 71,760 | 23,153 | 3,193 | 3.8 | N.A. |
| 1995 | 86,054 | 31,110 | 5,350 | 17.2 | N.A. |
| 1996 | 83,624 | 30,046 | 7,366 | 24.5 | N.A. |
| 1997 | 81,139 | 31,776 | 8,719 | 27.4 | N.A. |
| 1998 | 106,844 | 70,184 | 12,088 | 17.2 | 5,601 |
| 1999 | 97,214 | 73,748 | 8,724 | 11.8 | 4,649 |
| 2000 | 98,905 | 67,796 | 6,739 | 9.9 | 4,902 |
| 2001 | 122,460 | 71,532 | 6,187 | 8.6 | 2,756 |
| 2002 | 124,734 | 83,192 | 8,975 | 10.8 | 5,359 |
| 2003 | 130,375 | 91,538 | 8,383 | 9.2 | 5,726 |
| Totals | 1,060,574 | 589,271 | 77,629 | 13.2 | 28,993 |

N.A.: Data is not available

PCM: Postconsumer Material

Percent: The percentage of Postconsumer Material in Regulated Trash Bags

Appendix B:

Suppliers of Postconsumer Material

| Supplier's Name | (Location) |
|-------------------------|-----------------------|
| 3G Inc. | Vernon, CA |
| ABC Polymers Inc. | Stone Mountain, GA |
| Al's Company | Vernon, CA |
| Alpha Omega Plastics | Elk Grove Village, IL |
| Bay Polymer Corp. | Fremont, CA |
| Bayou Plastics Inc. | Monroe, LA |
| Dakota Western | Agency Village, SD |
| Delta Plastics | Stuttgart, AR |
| Discover Plastics | Rancho Cucamonga, CA |
| Envision Plastics | Pomona, CA |
| Interstate Plastics | Vancouver, WA |
| LPCC | West Monroe, LA |
| Mercury Plastics | City of Industry, CA |
| Muehlstein | Orange, CA |
| Omega Extruding | Rancho Cucamonga, CA |
| Pacific Source | Fullerton, CA |
| Petoskey Plastics Inc. | Petoskey, MI |
| Pitt Plastics | Pittsburg, KS |
| PPP, LLC | Los Angeles, CA |
| Rainier Plastics | Yakima, WA |
| Renegade | Thousand Oaks, CA |
| Starlight Manufacturing | Oakland, CA |
| Webster Industries | Montgomery, AL |